

Safe Use of Needles



Disclaimer

A series of booklets has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from the School of Veterinary Sciences, University of Bristol, UK. Please note:

- Each booklet illustrates one way to perform a skill and it is acknowledged that there are often other approaches. Before using the booklets, students should check with their university or college whether the approach illustrated is acceptable in their context or whether an alternative method should be used.
- The booklets are made available in good faith and may be subject to changes.
- In using these booklets, you must adopt safe working procedures and take your own risk assessments, checked by your university, college etc. The University of Bristol will not be liable for any loss or damage resulting from failure to adhere to such practices.

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Equipment list: Safe Use of Needles

Equipment for this station:

- Needles
- Syringes
- Sharps bin

In most situations, you will not need to recap needles but will dispose directly into a sharps container. However, there are some situations where this is not possible. Please use the techniques described in this booklet to reduce the chance of needle stick injuries, which can have serious consequences.

Considerations for this station:

- Needles are sharp and can cause injury
- Dispose of sharps in a sharps container/bin
- Read the **NEEDLE SAFETY IN LARGE ANIMAL PRACTICE** guidance on the back page of this booklet
- Please refer to
 - ‘General risk assessment form Needles CSL_R03’ (in the CSL)

Anyone working in the Clinical Skills Lab must agree to abide by the ‘CSL_I00 CSL house rules’ & ‘CSL_I02 lab area rules’ and must read the ‘CSL_I01 CSL induction’

Please inform a member of staff if equipment is damaged or about to run out.



Clinical Skills: Safe Use of Needles

1



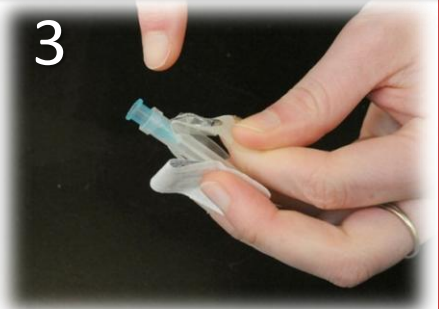
Select an appropriate size needle and syringe for the species and size of animal being injected, and the volume and viscosity of the drug. Some drugs e.g. meloxicam, are 'thin' so can be drawn up and injected easily - use a narrow (higher gauge or G number) needle; others drugs e.g. amoxicillin are 'thick' and a wider needle (lower G) is needed. See later in booklet for more information.

2



Peel the packaging off the needle, from the hub end – flaps are provided to make this easy.

3



To maintain sterility, take care not to touch the hub of the needle or place it onto a non-sterile surface.

cap



To open needles in plastic packaging, press and turn the top (green, see arrows), and remove the top. Don't touch the hub of the needle. Connect the syringe without removing the needle from the cap.

4



Peel off the packaging from the syringe, using the flaps provided. You can touch the barrel and plunger of the syringe.

5



Care should be taken not to touch the tip of the syringe to ensure sterility is maintained.

6



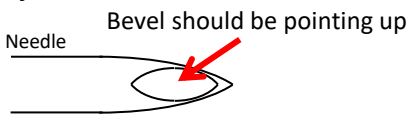
Connect the needle and syringe whilst the needle cap is still on the needle.



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Ensure the needle is firmly attached, and that the bevel of the needle is aligned with the scale on the syringe. This is important because when injecting into a vein the bevel needs to be pointing up and the scale needs to be visible to see how much drug has been injected.



Remove the needle cap and draw up the drug. The needle should be inserted into the central part of the rubber septum. Support the bottle in your non-dominant hand, and hold the syringe in your dominant hand. Brace your dominant hand against the palm of your non-dominant hand; this reduced the chance of an injury e.g. if your arm gets knocked.



Once the injection has been administered, the needle and syringe need to be disposed of correctly.

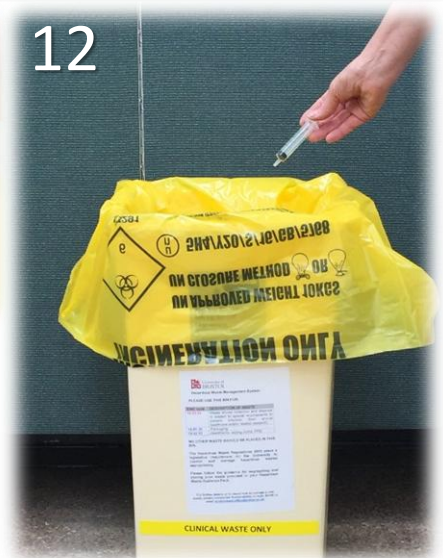
Remove the needle from the syringe by using the guides on the top of the sharps container. Align the syringe and needle as shown (above). The hub of the needle must sit below the plastic groove.



Slide the needle and syringe in the direction illustrated (by the red arrow).



The needle will then drop into the sharps container.

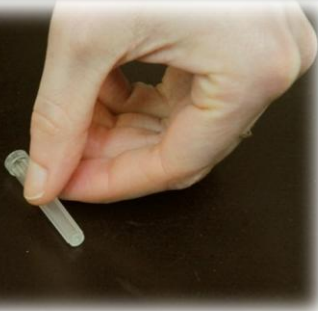


The syringe can now be disposed of in a clinical waste bin.



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13



If you do have to recap the needle, use the technique: *'one handed needle capping'*
Place the needle cap on a work surface away from clutter and other people.

14



Using one hand, and without touching the needle cap, align the needle with the cap.

15



Slide the needle into the cap.



Some practices have needle cap holders; it is preferable to use these if available. The needle cap is securely held in the holder for uncapping and re-capping of the needle, and reduces the risk of injury.

16



Lift the syringe and needle so that the cap 'falls' onto the needle.

17



Once the needle is covered with the cap, secure the cap with your other hand.



Selecting Appropriate Needles and Syringes



Select the syringe size after calculating the drug volume. Use the smallest syringe possible for the volume to be injected, as the graduations (on the syringe barrel) will be smaller.



For example, if injecting 3.4ml of drug, use a 5ml syringe as there will be 0.2ml graduations.

Useful Information

- Select the needle based on the species, size of animal, site of injection and drug viscosity.
- Needle size is described in gauge (G) and length (usually as inches) e.g. 23G x $\frac{5}{8}$ ". The **higher** the gauge number, the **narrower** the bore of the needle.
- Generally, use the smallest needle possible to reduce trauma.
- Remember, it will take considerable pressure to push thick, viscous drugs through a narrow needle – this can cause the needle to ‘burst’ off the syringe. Therefore, use a wider bore needle for more viscous drugs.



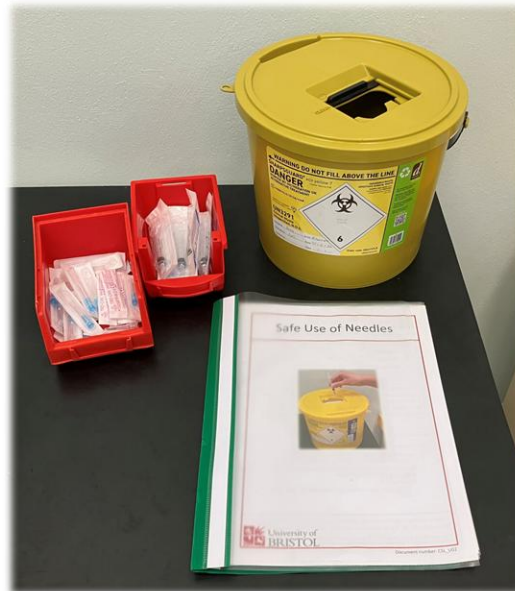


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Resetting the station: Safe Use of Needles

1. Ensure all sharps are disposed of safely in a sharps bin
2. Leave the work space clean and tidy
3. Place unused needles and syringes in the trays provided

Station ready for the next person:



Please inform a member of staff if equipment is damaged or about to run out.

NEEDLE SAFETY IN LARGE ANIMAL PRACTICE

As already shown in this booklet (ref: Needle Safety Booklet), the gold standard in practice is the immediate disposal of an uncapped needle into a sharps container. However, ambulatory and large animal practice presents situations where this is not always possible since a sharps container may not be immediately available at the point of injection (e.g. vaccinating or administering medication to a horse in a stable or an animal in a field). In these situations, the risk associated with transporting an exposed needle must be balanced against the risk of re-capping.

The following information is to be used as guidance so that the risk can be mitigated as much as possible when the gold standard cannot be achieved.

- Plan procedure in advance (e.g. administering medication intravenously, subcutaneously or intramuscularly) and identify the nearest sharps container (e.g. in the back of your vehicle)
- If possible, carry a small sharps container (e.g. in a grooming box with a carry handle) and bring as close to the animal as possible, i.e. outside the stable door or on a table next to the cattle crush
- Avoid carrying exposed needles between locations
- If the needle must be re-capped (e.g. you have finished vaccinating in the stable and you need to walk out of the stable with the needle and syringe in your hand in order to dispose of the needle safely), use a safe technique that minimises risk of needle stick injury. **It is unlikely that you will have a surface on which to perform the one-handed needle capping technique.**
- Dispose of the needle into a sharps container as soon as possible

Performing a quick risk assessment prior to carrying out the procedure will help reduce the risk of a needle stick injury from occurring.

Some other risk factors to consider that might contribute to a needle stick injury occurring:

- The horse/large animal suddenly moving at the point of injection
- The operator becomes distracted (owner chatting etc)
- Inadequate restraint of animal
- Owner/handler standing too close

Summary

Immediate disposal of used needles into a sharps container without the need for recapping is the gold standard approach. However, large animal vets will often find themselves in situations where this is not possible and will need to recap before disposal. The one-handed capping technique is often not possible in large animal practice due to the lack of a flat surface immediately next to the patient. In these situations, a clinician should perform a risk assessment and use the safest available option, prioritising portable sharps containers and minimising handling of exposed needles, especially around unpredictable animals.